all advanced cases. It is also expected that as a result of identification of oncogenic addition loops, biomarker-based trial enrichment will be the mainstay to progress in this field towards a more personalized approach. Drugs blocking key drivers will be added to backbone therapies in selected populations to maximize the efficacy and cost-benefit of these otherwise expensive interventions.

373 INVITED

Novel Imaging Techniques and Treatment Assessment for Evaluating Benefit From Targeted Agents

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Sorafenib, a tyrosine kinase inhibitor, has shown clinical efficacy in patients with hepatocellular carcinoma (HCC) and is the standard of care for patients with advanced-stage HCC. Nowadays, many targeted therapies are evaluated in HCC either as sole treatment or in combination with other treatments such as tumour ablation, chemo-embolization, and surgical resection. Therefore, there is a need to assess efficacy of targeted therapy in HCC.
RECIST is the reference method to evaluate treatment efficacy in soild tumours but does not seem appropriate in evaluating targeted therapy as objective responses were seen in very few cases in patients treated with sorafenib or sunitinib.
New criteria have been proposed to evaluate treatment efficacy of non surgical treatments in patients with HCC. The most common ones are the Choi criteria, the EASL criteria, and the modified RECIST criteria. All these criteria mainly focus on internal tumour changes such as appearance of necrosis or disappearance of tumour hypervascularity. Many examples will be shown during the lecture.
Another approach is based on functional imaging and especially perfusion-related imaging. Contrast-enhanced ultrasound, CT perfusion and dynamic contrast-enhanced MR imaging have the capability to assess perfusion changes in patients under treatment. Advantages and disadvantages of these modalities will be discussed.
Last, other functional tools that are not routinely used will be presented.

374 INVITED

Local Therapy for HCC

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The management of hepatic tumours, is becoming an increasingly significant problem. Hepatocellular carcinoma (HCC) (and colorectal cancer (CRC)) are among the five most common causes of cancer deaths worldwide. The incidence of HCC is increasing, linked with hepatitis B and C. An increase in the incidence of cholangiocarcinoma (CC) has also been reported. For several years, surgical resection has been the standard treatment for HCC. Unfortunately, the majority of patients with hepatobiliary tumours or HCC are inoperable, either because of impaired liver function, central location of the tumour, or comorbid illness. For these patients, other techniques have been developed and evaluated such as liver transplantation, systemic chemotherapy, intra-arterial hepatic chemoembolization, immunotherapy, destruction by radiofrequency, cryotherapy, and laser thermotherapy. Currently, the exact indication for each of these different treatment modalities has not been defined, and there is no standard treatment for inoperable hepatic tumours. Radiotherapy, alone or combined with chemotherapy, has become an additional treatment option.
Stereotactic body radiation therapy (SBRT) for liver disease has been reported with encouraging rates of local control and toxicity. Unfortunately, the published series are heterogeneous for the doses used as well as the number of patients treated, and so do not permit reliable univariate or multivariate analyses. A review of different techniques will be presented.

375 INVITED

Liver Transplantation and Resection for HCC

Abstract not received

Scientific Symposium (Tue, 27 Sep, 09:00–11:00)
From Bench to Bedside in Ovarian Cancer

376 INVITED

New Concepts on the Origins of Ovarian Cancer

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Epithelial ovarian tumours are heterogeneous neoplasms which are classified according to cell type into serous, mucinous, endometrioid, clear cell, transitional, and squamous cell tumours. Parenthetically, none of these cells are found in the normal ovary and the development of different tumour cells has long been attributed to mullerian "neometaplasia" of the ovarian surface epithelium (mesothelium). More importantly, these tumours are further subdivided into benign, borderline (intermediate), and malignant (carcinoma) depending upon the degree of cell proliferation and nuclear atypia, and the presence or absence of stromal invasion.
Malignant epithelial tumours (carcinomas) are the most common ovarian cancers, accounting for 90% of cases, and are the most lethal gynecological malignancies. Currently, based on light microscopy and molecular genetics, ovarian carcinomas are subdivided into at least five main subtypes: high-grade serous carcinomas (70%), endometrioid carcinomas (10%), clear cell carcinomas (10%), mucinous carcinomas (5%), and low-grade serous carcinomas (<5%) (Table). These tumours account for 98% of ovarian carcinomas, can be reproducibly diagnosed, and are inherently different diseases, as indicated by differences in epidemiological and genetic risk factors, precursor lesions, patterns of spread, molecular events during oncogenesis, response to chemotherapy, and outcome.
Recent evidence suggests that what have been traditionally thought to be primary ovarian cancers actually originate in other pelvic organs and involve the ovary secondarily. In fact, it has been proposed that high-grade serous carcinomas arise from precursor epithelial lesions in the distal fimbriated of the fallopian tube, whereas endometrioid and clear cell carcinomas originate from ovarian endometriosis.

Table: Ovarian carcinoma: clinical and molecular features of the 5 most common subtypes

	HGSC	LGSC	MC	EC	CCC
Risk factors	BRCA1/2	?	?	HNPCC*	?
Precursor lesions	Tubal intraepithelial carcinoma	Serous borderline tumour	cystadenoma/ borderline tumour?	Endometriosis	Endometriosis
Pattern of spread	Very early transcoelomic spread	Transcoelomic spread	Usually confined to ovary	Usually confined to pelvis	Usually confined to pelvis
Molecular abnormalities	BRCA, p53	BRAF, KRAS	KRAS, HER2	PTEN	HNF1
Chemosensitivity	High	Intermediate	Low	High	Low
Prognosis	Poor	Intermediate	Favorable	Favorable	Intermediate

*Hereditary non-polyposis colorectal carcinoma.

377 INVITED

Genomics of Ovarian Cancer – Utility as Predictive Biomarkers

Abstract not received

378 INVITED

New Directions in Angiogenesis Therapy

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Ovarian cancer accounts for thousands of lives each year and new treatments are needed. Although surgery and chemotherapy are effective cytoreductive strategies, maintenance therapy had proved elusive until recent data on anti-angiogenic agents emerged. Two trials, GOG218 and ICON7, have tested the benefit of adding bevacizumab, an anti-Vascular Endothelial Growth Factor (VEGF) antibody to carboplatin and paclitaxel. The trials demonstrated that in patients with bulk residual FIGO stage III/IV disease, progression free survival (PFS) was increased by approximately 6 months in the experimental arms. Overall survival (OS) data for ICON7, presented recently, reported an 8-month OS advantage in high-risk patients on the experimental arm.
GOG218, which incorporated doses of bevacizumab that were twice those used in ICON7, has not yet reported an OS difference, although mature data are not yet available. The reason for the apparent difference in survival between the two trials is unknown but may be due to the more widespread use of VEGF inhibitors in the control arm after progression in GOG218. Evidence to support the hypothesis that bevacizumab is active in recurrent disease emerged in the recently presented OCEANS trial, which demonstrated that bevacizumab improves PFS by 4 months